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NAVIGATING A WORLD OF DISRUPTION

BRIEFING NOTE
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SUMMARY

We live in an era of disruption in which powerful global forces are changing how we live and work. The rise of China, India, and other emerging economies, the rapid spread of digital technologies, growing challenges to globalization, and, in some countries, the splintering of long-held social contracts are all roiling business, the economy, and society. These trends offer considerable new opportunities to companies, sectors, countries, and individuals that embrace them successfully. They are bringing forth dynamic and innovative new players on the world stage and could give a much-needed boost to productivity and prosperity in many countries. Indeed, our research shows that the benefits for those in the forefront are larger than ever. At the same time, the downside for those who cannot keep up has also grown disproportionately. For business leaders, policy makers, and individuals, figuring out how to navigate these skewed times may require some radical rethinking. This briefing note, which draws on recent research by the McKinsey Global Institute, focuses on both the value-creating opportunities and the intense competitive and societal challenges we all face in this era of technological ferment. It is divided into three sections: the first looks at the accelerated disruption; the second details the increasingly skewed impact of that disruption; and the third offers some ideas of what a more sustainable and inclusive society might look like. We list key references at the end.

THE DISRUPTION IS INTENSIFYING

Powerful forces are changing our world. They include the shifting locus of economic activity and dynamism to China, India, and other emerging economies; the world's growing connectedness through movements in capital, people, and information; the acceleration in the scope, scale, and economic impact of technology; and the aging global population. The impact of these and other disruptive forces is being felt worldwide, touching all countries, sectors, companies, and, increasingly, workers and the environment. These forces are also morphing in some unexpected ways and combining to create even greater impacts than we expected. Among our latest research findings: the top emerging-market companies in recent years have generated better returns to shareholders than companies in high-income countries; China's exposure to the rest of the world, as measured by the magnitude of flows of trade, technology, and capital, has been declining even as the rest of the world's exposure to China has risen; greater gender equality could substantially boost GDP; and "superstar" firms are not limited to just a handful of tech giants, but are to be found across countries and sectors.

The center of economic gravity is shifting east and south, propelled by high-growth emerging economies and globally competitive companies

Emerging economies led by China and India have accounted for almost two-thirds of global GDP growth and more than half of new consumption in the past 15 years. Among emerging economies, our research has identified 18 high-growth "outperformers" that have achieved powerful and sustained long-term growth—and lifted more than one billion people out of extreme poverty since 1990. Seven of these outperformers—China, Hong Kong, Indonesia, Malaysia, Singapore, South Korea, and Thailand—have averaged GDP growth of

at least 3.5 percent for the past 50 years. Eleven other countries (Azerbaijan, Belarus, Cambodia, Ethiopia, India, Kazakhstan, Laos, Myanmar, Turkmenistan, Uzbekistan, and Vietnam) have achieved faster average growth of at least 5 percent annually over the past 20 years. Underlying their performance are pro-growth policy agendas based on productivity, income, and demand, and often fueled by strong competitive dynamics. The next wave of outperformers now looms as countries from Bangladesh and Bolivia to the Philippines, Rwanda, and Sri Lanka adopt a similar agenda and achieve rapid growth.

The dynamism of these economies has gone hand in hand with the rise of highly competitive emerging-market firms, which are increasingly taking on incumbents in advanced economies. On average, outperformer economies have twice as many companies with revenue over $500 million as other emerging economies. In addition to driving economic growth at home, they now play a disproportionately large role on the global stage: while they accounted for only about 25 percent of the total revenue and net income of all large public companies in 2016, they contributed about 40 percent of the revenue growth and net income growth from 2005 to 2016. More than 120 of these companies have joined the Fortune Global 500 list since 2000, and by several measures, they are already more innovative, nimble, and competitive than Western rivals. For example, our surveys show that they derive 56 percent of their revenue from new products and services, eight percentage points more than their peers in high-income economies, and make important investment decisions six to eight weeks faster. They can also earn better returns for investors. Between 2014 and 2016, the top quartile of outperformer companies generated total return to shareholders of 23 percent on average, compared with 15 percent for top-quartile firms in high-income countries (Exhibit 1).

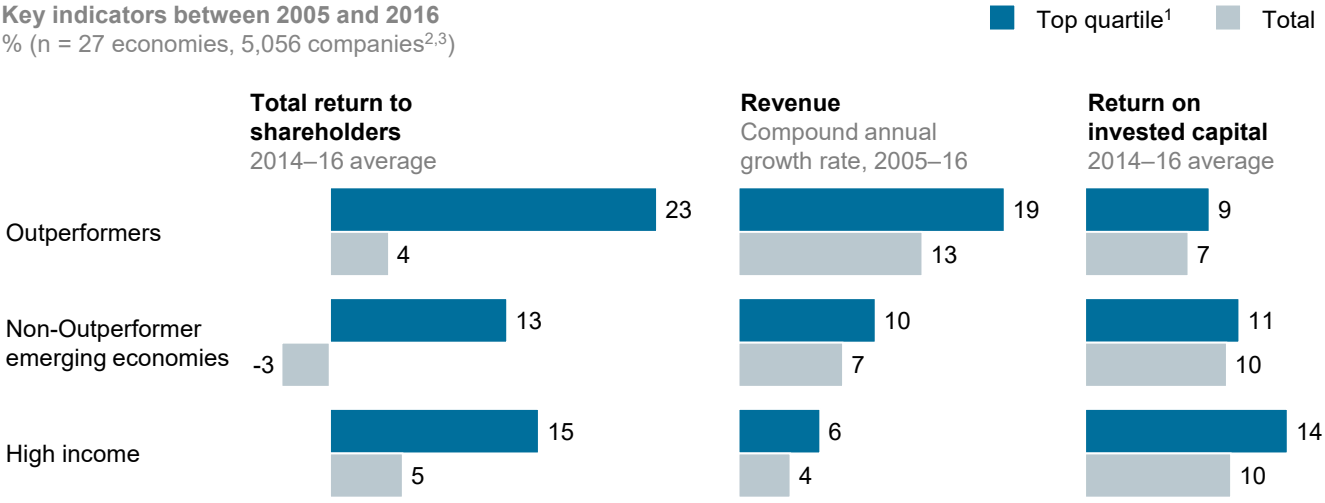
Globalization patterns are changing, with rapid growth in data flows and a larger role for high-growth emerging economies

Much of the recent focus on globalization has been on trade pullbacks, rising protectionist measures, and public hostility. As a phenomenon, however, globalization has not gone into reverse; rather, it has shifted gears to become more data-driven and more focused on South-South flows. The seeming flattening of globalization that followed the 2008 financial crisis disguises new patterns of connectedness. While cross-border flows of goods and finance have lost momentum, data flows are helping drive global GDP. Cross-border data bandwidth grew by 148 times between 2005 and 2017, to more than 700 terabytes per second—a larger quantity per second than the entire US Library of Congress—and is projected to grow by another nine times in the next five years as digital flows of commerce, information, searches, video, communication, and intracompany traffic continue to surge.

Exhibit 1

High-performing firms in outperforming developing economies can have higher total return to shareholders and revenue growth than those in other economies.

Key indicators between 2005 and 2016
% (n = 27 economies, 5,056 companies[2,3])



1 "Top quartile" is defined based on the average total return to shareholders over the last five years.
2 Outperformers include China, Hong Kong, Indonesia, India, Malaysia, Singapore, South Korea, and Thailand; non-Outperformer emerging economies include Argentina, Brazil, Egypt, Mexico, Nigeria, Pakistan, Philippines, Poland, Russia, South Africa, Turkey, and Venezuela; High income include: Canada, France, Germany, Italy, Japan, United Kingdom, and United States.
3 Publicly listed companies with more than $500 million revenue in 2016.

SOURCE: McKinsey Corporate Performance Analytics; McKinsey Global Institute analysis

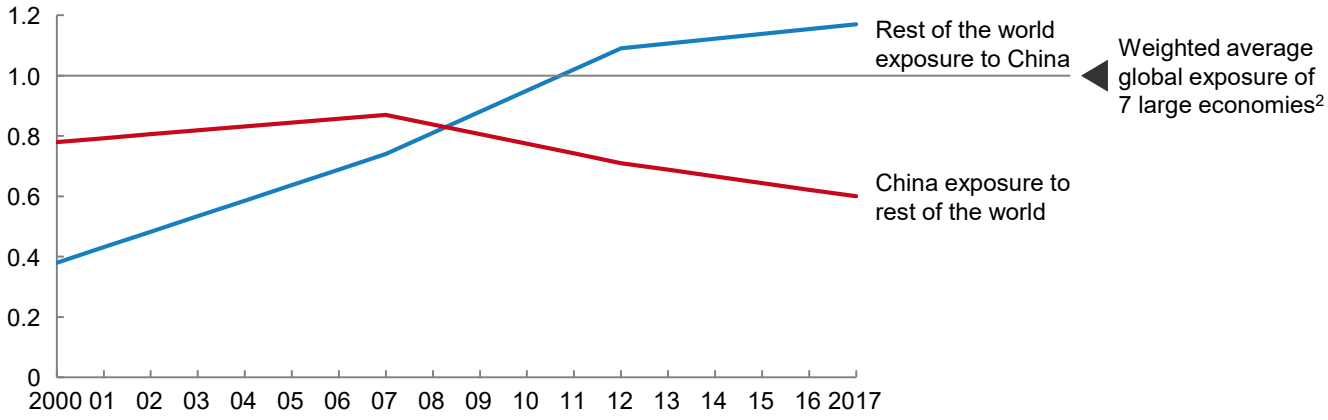
In line with its rising economic role, the developing world is now driving global connectedness. For the first time in history, emerging economies are counterparts on more than half of global trade flows, and South-South trade is the fastest-growing type of connection. In the MGI Connectedness Index, Singapore tops the latest rankings, followed by the Netherlands, the United States, and Germany. China has surged from number 25 to number seven. South-South and China-South trade jumped from 8 percent of the global total in 1995 to 20 percent in 2016. The shifting nature of the Chinese economy, toward a more R&D-intensive focus and away from low-cost manufacturing, plus China's push through the Belt and Road initiative, may begin to create a new trade ecosystem with China at the core. By comparison, North-North trade and North-South trade have declined as a share of total trade, especially since the 2008 financial crisis. North-North trade is now 33 percent of the total, versus 43 percent in 2005 and 55 percent in 1995.

Amid these shifts, our latest research suggests that China's relationship with the world may be at a turning point. By 2017, China accounted for 15 percent of world GDP. It overtook the United States to become the world's largest economy in purchasing power parity terms in 2014, according to International Monetary Fund data—for the first time since 1870. (In nominal terms, China's GDP was 64 percent of US GDP in 2017, making it the second-largest economy in the world). Behind these headline numbers lies a less-noticed shift: over the past decade, even as its economy has grown, China's exposure to the world, as measured by the magnitude of flows of trade, technology, and capital with the rest of the world relative to its economy, has declined. At the same time, the world's exposure to China (the magnitude of flows with China relative to the global economy) has increased since 2000. Metrics used to measure exposure include China's importance as a market and supplier of goods and services; the importance of Chinese technology exports for global R&D spending; and China's importance as a supplier of financing (Exhibit 2).

Global value chains are also evolving. They are being reshaped in part by technology including automation, which could amplify the shift toward more localized production of goods near consumer markets. And they are changing along with global demand, as China and other developing countries consume more of what they produce and export a smaller share. As emerging economies build more comprehensive domestic supply chains, they are reducing their reliance on imported intermediate inputs. The result is that goods-producing value chains have become less trade-intensive, even as cross-border services are growing briskly—and generating more economic value than trade statistics capture, according to our analysis. Trade based on labor-cost arbitrage has been declining and now makes up only 20 percent of goods trade. Global value chains are becoming more knowledge-intensive and reliant on high-skill labor. Finally, goods-producing value chains (particularly automotive as well as computers and electronics) are becoming more regionally concentrated as companies increasingly establish production in proximity to demand.

Exhibit 2

China has been reducing its exposure to the world while the world has been increasing exposure to China.[1]


1.2
1.0
0.8
0.6
0.4
0.2
0
2000 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 2017
Rest of the world exposure to China
Weighted average global exposure of 7 large economies[2]
China exposure to rest of the world

1 Metrics measured: for trade, China's importance as a market and as a supplier of goods and services to the global economy; for technology, the importance of Chinese technological exports to global R&D spending and China's technology import and its influence in domestic R&D; for capital, China's importance as a supplier of financing and as a destination for investments.

2 Index is set to a value of 1.0 for a given year, and represents the exposure to the world of China, France, Germany, India, Japan, the United Kingdom, and the United States, across the three metrics of trade, technology, and capital.

SOURCE: IHS Global Insight; IMF; OECD; WIOD; McKinsey Global Institute analysis

The pace of technological progress is accelerating, bringing significant opportunities to create value even as it redefines the future of work

Digital technologies have been reinventing the way we live, work, and organize. Smartphones, the mobile internet, e-commerce, and cloud-based services have opened the door to more mobility and convenience as well as to greater competition. Businesses have been harnessing advanced analytics and the Internet of Things to transform their operations, and those in the forefront reap the benefits: companies that are digital leaders in their sectors have faster revenue growth and higher productivity than their less-digitized peers. They improve profit margins three times more rapidly than average and are often the fastest innovators and the disruptors of their sectors. The forces of digital have yet to become fully mainstream, however. On average, industries are less than 40 percent digitized, despite the relatively deep penetration of these technologies in media, retail, and high tech.

Now comes the next wave of innovation, in the form of advanced automation and artificial intelligence (AI). An explosion in algorithmic capabilities, computing capacity, and data is enabling beyond-human machine competencies and a new generation of system-level innovation. Machines already surpass human performance in areas like image recognition and object detection, and these capabilities can be used to diagnose skin cancer or lip-read more accurately than human experts. Combining these capabilities is leading to system-level innovation, for example the driverless car, which takes advantage of innovations in sensors, LIDAR, machine vision, mapping, satellites, navigation algorithms, and robotics. Our research finds that companies in the forefront of adopting AI are likely to increase employment rather than reduce it, as innovation-focused adopters position themselves for growth, which tends to stimulate employment.

These technologies still have limitations, and deployment can be complex. Nonetheless, productivity gains across sectors are already visible, with AI use cases in functions such as sales and marketing (e.g., “next product to buy” personalization), supply chain and logistics, and preventive maintenance. Our analysis of more than 400 use cases across 19 industries and nine business functions found that AI could improve on traditional analytics techniques in 69 percent of potential use cases. Deep learning could account for as much as $3.5 trillion to $5.8 trillion in annual value, or 40 percent of the value created by all analytics techniques (Exhibit 3). For the global economy, too, AI adoption could be a boon. A simulation we conducted showed that AI adoption could raise global GDP by as much as $13 trillion by 2030, or about 1.2 percent additional GDP growth per year.

AI could also contribute to tackling pressing societal challenges, from healthcare to climate change to humanitarian crises; a library of social good use cases we collected maps to all 17 of the UN’s Sustainable Development Goals. Yet AI is not a silver bullet. Significant bottlenecks, especially relating to data accessibility and talent, will need to be overcome, and AI presents risks that will need to be mitigated. It could introduce or exacerbate social challenges, for example through malicious use or abuse, bias, privacy invasion, or lack of transparency.

Aging populations are forcing developed regions worldwide to rely more on waning productivity and greater migration to propel growth

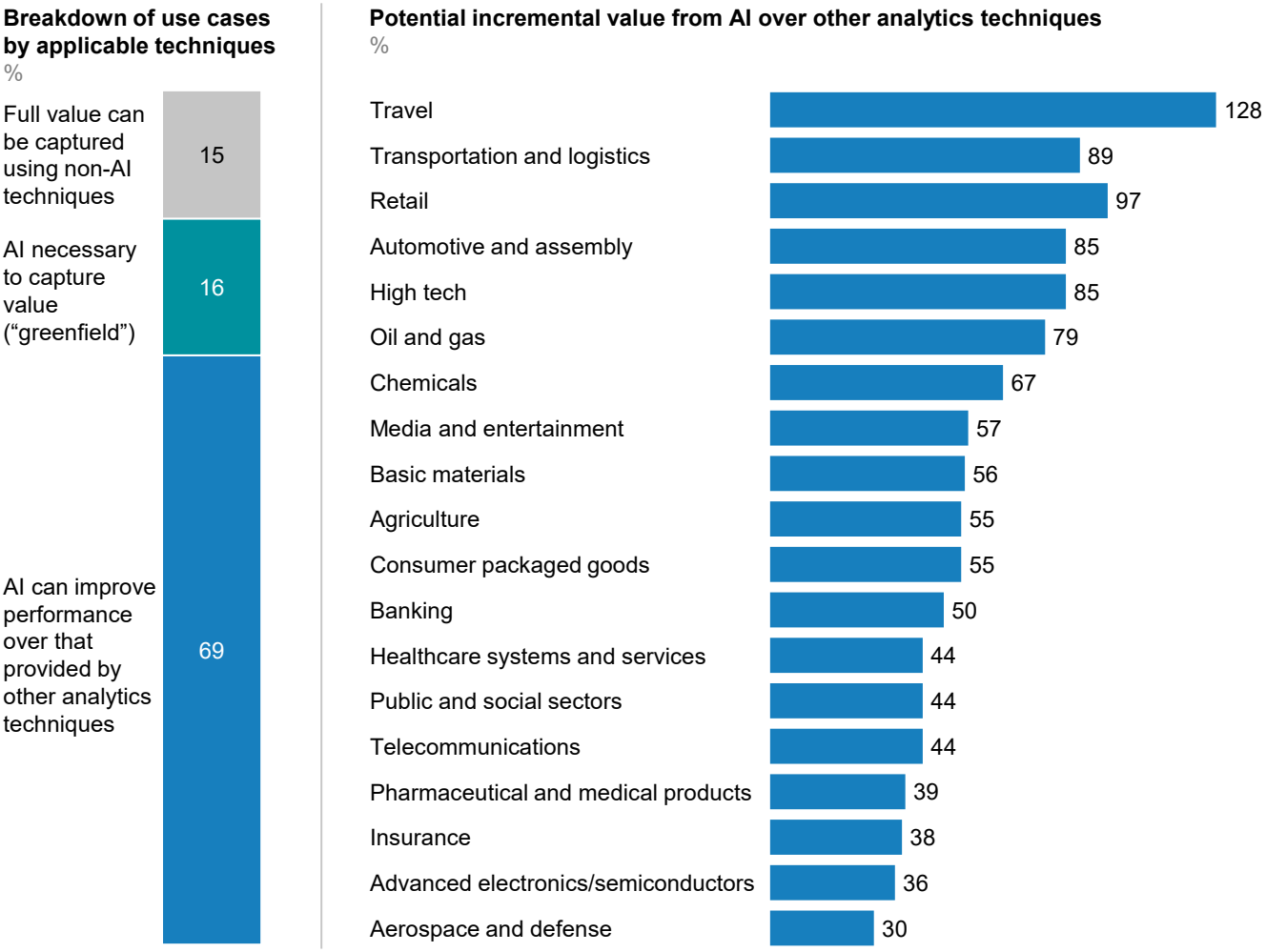
Labor productivity growth has waned and is near historic lows in the United States and much of Western Europe, despite a job-rich recovery after the global financial crisis. Productivity growth averaged just 0.5 percent in 2010–14, down from 2.4 percent a decade earlier. This productivity growth weakness comes as birth rates in countries from Germany, Japan, and South Korea to China and Russia are far below replacement rates and working-age population growth has either slowed or gone into reverse. In some countries with declining populations, such as Japan and Germany, some cities are shrinking. Among their other effects, these demographic trends put a greater onus on productivity growth to propel GDP growth; over the past 50 years, just under half of GDP growth in G-20 countries came from labor force growth, while productivity growth accounted for the remainder.

Digitization, often involving a transformation of operating and business models, promises significant productivity-boosting opportunities in the future, but the benefits have not yet materialized at scale in productivity data because of adoption barriers and lag effects as well as transition costs. Our research suggests that productivity could grow by at least 2 percent annually over the next 10 years, with 60 percent coming from digital opportunities. However, while crisis-related aftereffects are diminishing, long-term drags on demand for goods and services may persist and hold back productivity, a result of changing demographics, declining labor share of income, rising income inequality, polarization of labor markets, and falling investment rates.

In terms of consumption, the aging population in many developed countries (that is, the retired and elderly over 60) are increasingly important drivers of global consumption. The number of people in this age group will grow by more than one-third, from 164 million today to 222 million in 2030. We estimate that they will generate 51 percent of urban consumption growth in developed

Exhibit 3

In more than two-thirds of our use cases, artificial intelligence (AI) can improve performance beyond that provided by other analytics techniques.



SOURCE: McKinsey Global Institute analysis

countries, or $4.4 trillion, in the period to 2030. That is 19 percent of global consumption growth. The 75-plus age group's urban consumption is projected to grow at a compound annual rate of 4.5 percent between 2015 and 2030. In addition to increasing in number, individuals in this group are consuming more, on average, than younger consumers, mostly because of rising public and private healthcare expenditure. Retirees and the elderly in developed economies today have per capita consumption of around $39,000 per year. In comparison, the 30-to-44 age group consumes on average $29,500 per year. Healthcare spending by those aged 60 and older is projected to grow by $1.4 trillion in the period to 2030.

With low fertility in the developed world, migration has become the primary driver of population and labor force growth in key developed regions worldwide. Since 2000, growth in the total number of migrants in developed countries has averaged 3.0 percent annually, far outstripping the 0.6 percent annual population growth in these nations. First-generation immigrants constitute 13 percent of the population in Western Europe, 15 percent of the population in North America, and 48 percent in the Gulf Cooperation Council countries. Besides contributing to output today, immigrants provide a needed demographic boost to the current and future labor force in destination countries. Improving the old-age dependency ratio is of critical importance to countries like Germany, Spain, Canada, and the United Kingdom, where most public pensions have a pay-as-you-go structure and worsening dependency ratios threaten to make many plans unsustainable.

THESE FORCES ARE CREATING A GROWING GULF BETWEEN THOSE EMBRACING CHANGE AND THOSE FALLING BEHIND

Disparity is growing among countries, sectors, companies, and individuals. Disproportionately large rewards go to the winners, while those falling behind face

disproportionately large losses. This skew is contributing to increasing political and social discontent, with unpredictable results that have added to the disruption. One analysis we conducted in Europe suggests that the trends we have identified may put more pressure on inequality and institutional trust in the next decade. The trends will have differing impact depending on whether policy makers respond to them vigorously or passively, our analysis suggests.

"Superstar" effects: Disproportionately large gains for top performers and correspondingly heavy losses for those falling behind

In our research, we define "superstar" as a firm, sector, or city that has a substantially greater share of income than peers and is pulling away from those peers over time. For companies, we analyzed nearly 6,000 of the world's largest public and private firms with annual revenues of at least $1 billion; together they make up 65 percent of global corporate pretax earnings. Superstars constitute the top 10 percent and capture 80 percent of the economic profit. Superstar firms come from all sectors of the global economy and all regions of the world; indeed, their diversity has increased over the past 20 years. Among them are the usual US and Chinese tech suspects, some of which didn't exist 20 years ago—including Alibaba, Alphabet, Facebook, and Tencent—as well as global brands that have been around for decades, such as Coca-Cola and Nestlé. But the list also includes a panoply of other firms, from Chinese banks to French luxury companies to German automakers. American companies are less represented than they were 20 years ago but still make up the largest share, accounting for 38 percent of the leaders, compared with 45 percent in the 1990s. Companies from China, India, Japan, and South Korea have made the biggest gains and now account for 22 percent of the total, up from 7 percent, underscoring the increasing clout of emerging-market players.

These top-decile firms capture 1.6 times more economic profit today compared to 20 years ago, with larger revenues and higher profit margins than in the past. By contrast, the bottom decile destroys more value than the top 10 percent creates. The economic losses of this bottom 10 percent of firms are 1.5 times larger on average than those of their counterparts 20 years ago. One-fifth of these companies at the bottom are unable to generate sufficient pretax earnings to sustain interest payments on their debt (Exhibit 4).

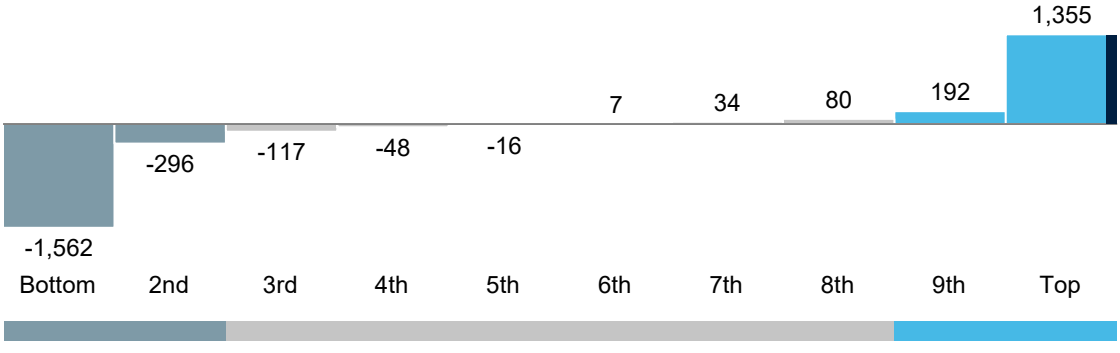
The skew is greater still when looking at the top 1 percent. The world's 58 largest economic value-creating firms account for 6 percent of all economic profit. They have 20 times more sales, four times more profit (based on net income margin), and five times more R&D investment than median firms with annual sales above $1 billion.

Superstars are not the entrenched incumbents of conventional wisdom. Since the early 1990s, almost half of the entire cohort of superstar firms in one business

Exhibit 4

For firms, economic value creation is distributed unevenly.

Distribution of economic profit among large companies with average sales above $1 billion
Average economic profit per firm in each decile, 3-year average (2014–16) (n = 5,750)
$ million



	Bottom	2nd	3rd	4th	5th	6th	7th	8th	9th	Top
Number of firms	1,150				3,450					1,150
Share of revenues (%)	37				25					38
Share of net income (%)	20				17					63

NOTE: Economic profit calculated as invested capital times the difference between return on invested capital and weighted average cost of capital.

SOURCE: McKinsey Corporate Performance Analytics; McKinsey Global Institute analysis

cycle have been knocked out of the top decile by the next business cycle. The fall can be steep: about two in five of the erstwhile highfliers dropped from top decile to bottom decile. This is often because the size of their invested capital base amplifies any decline in the returns to capital relative to the cost of capital. At the other end, about 20 percent of firms in the bottom half managed to move to the top half in each of the past two business cycles. About 10 percent of these firms moved from the bottom decile to the top decile, showing that upward mobility is also possible.

Technology adoption is uneven across sectors, companies, and countries

Our research highlights how digitization has widened the gap within sectors and among companies between early adopters and others—and we see this trend being repeated and magnified by AI and automation adoption. Our use of the term "digitization" encompasses digitization of assets, operations, and the workforce. In the United States and Europe, the depth of usage of digital technologies diverges across companies, including those within the same sector. Retail is a case in point, with some highly digitized firms in an otherwise fragmented and relatively undigitized sector. In most countries, a few sectors are relatively more highly digitized, for example financial services, media, and the tech sector itself. Many others are much less digitized, including asset-heavy sectors such as manufacturing and mining, quasi-public sectors such as healthcare and education, and fragmented industries such as hospitality and construction.

With the advent of AI, we find that sectors highly ranked in MGI's Industry Digitization Index are also leading AI adopters and have the most ambitious AI investment plans. As these firms expand AI adoption and acquire more data and AI capabilities, laggards may find it harder to catch up. In our surveys of companies, about half say they have embedded at least one AI capability into their standard business practices, and another 30 percent are piloting use of AI. For now, however, only about 20 percent of companies say they have embedded AI in several parts of the business. AI spending remains a small fraction of overall digital spending, and many organizations still lack the foundational practices to create value from AI at scale, for example, mapping where their AI opportunities lie and having clear strategies for sourcing the volumes of data that AI requires.

The gaps also are also significant among countries. The leading enablers of potential AI-driven economic growth, such as investment and research activity, digital absorption, connectedness, and labor market structure and flexibility, vary by country. Our research suggests that the ability to innovate and acquire the necessary human capital skills will be among the most important enablers—and that AI competitiveness will likely be an important factor influencing future GDP growth. Countries leading the race to supply AI have unique strengths that set them apart. Scale effects enable more significant investment, and network effects enable these economies to attract the talent needed to make the most of AI.

For now, China and the United States are responsible for the most AI-related research activities and investment. A second group of countries that includes Germany, Japan, Canada, and the United Kingdom has a history of driving innovation on a major scale and may accelerate the commercialization of AI solutions. Smaller, globally connected economies such as Belgium, Singapore, South Korea, and Sweden also score highly on their ability to foster productive environments where novel business models thrive. Countries in a third group, including but not limited to Brazil, India, Italy, and Malaysia, are in a relatively weaker starting position, but they exhibit comparative strengths in specific areas on which they may be able to build. India, for instance, produces around 1.7 million graduates a year with STEM degrees—more than the total of STEM graduates produced by all G-7 countries. Other countries, with relatively underdeveloped digital infrastructure, innovation and investment capacity, and digital skills, risk falling behind their peers.

Automation and AI adoption will bring transitions that require changes in occupations and new skills, and the dislocation may affect wages

We developed scenarios for the impact of automation on the workforce based on the pace and extent of adoption. Under a midpoint scenario, about 15 percent of the global workforce, or the equivalent of about 400 million workers, could be displaced by automation in the period 2016–30. At the same time, 550 million to 890 million new jobs could be created from productivity gains, innovation, and catalysts of new labor demand, including rising incomes in emerging economies and increased investment in infrastructure, real estate, energy, and technology.

This suggests that the growth in demand for work, barring extreme scenarios, would more than offset the number of jobs lost to automation. No less significant are the jobs that will change as machines increasingly complement human labor in the workplace. Our research has found that about 30 percent of the activities in 60 percent of all occupations could be automated by adapting currently demonstrated technologies—but that in only about 5 percent of occupations are nearly all activities automatable. In other words, more occupations are likely to be partially automated than wholly automated. Certain categories of work activity are technically more easily automatable than others, such as physical activities in highly predictable and structured environments, data

collection, and data processing. The least susceptible categories include managing others, providing expertise, and interfacing with stakeholders. Skills for workers complemented by machines, as well as work design, will need to adapt to keep up with rapidly evolving and increasingly capable machines. We see four key transitions from automation and AI adoption:

First, millions of workers will likely need to change occupations. Some of these shifts will happen within companies and sectors, but many will occur across sectors and even geographies. While occupations requiring physical activities in highly structured environments and in data processing will decline, others that are difficult to automate will grow. These changes may not be smooth and could lead to temporary spikes in unemployment.

Second, workers will need different skills to thrive in the workplace of the future. Demand for social and emotional skills such as communication and empathy will grow almost as fast as demand for many advanced technological skills. Demand for basic digital skills has been increasing in all jobs. Automation will also spur growth in the need for higher-level cognitive skills, particularly critical thinking, creativity, and complex information processing. Demand for physical and manual skills will decline, but these will remain the single largest category of workforce skills in 2030 in many countries (Exhibit 5).

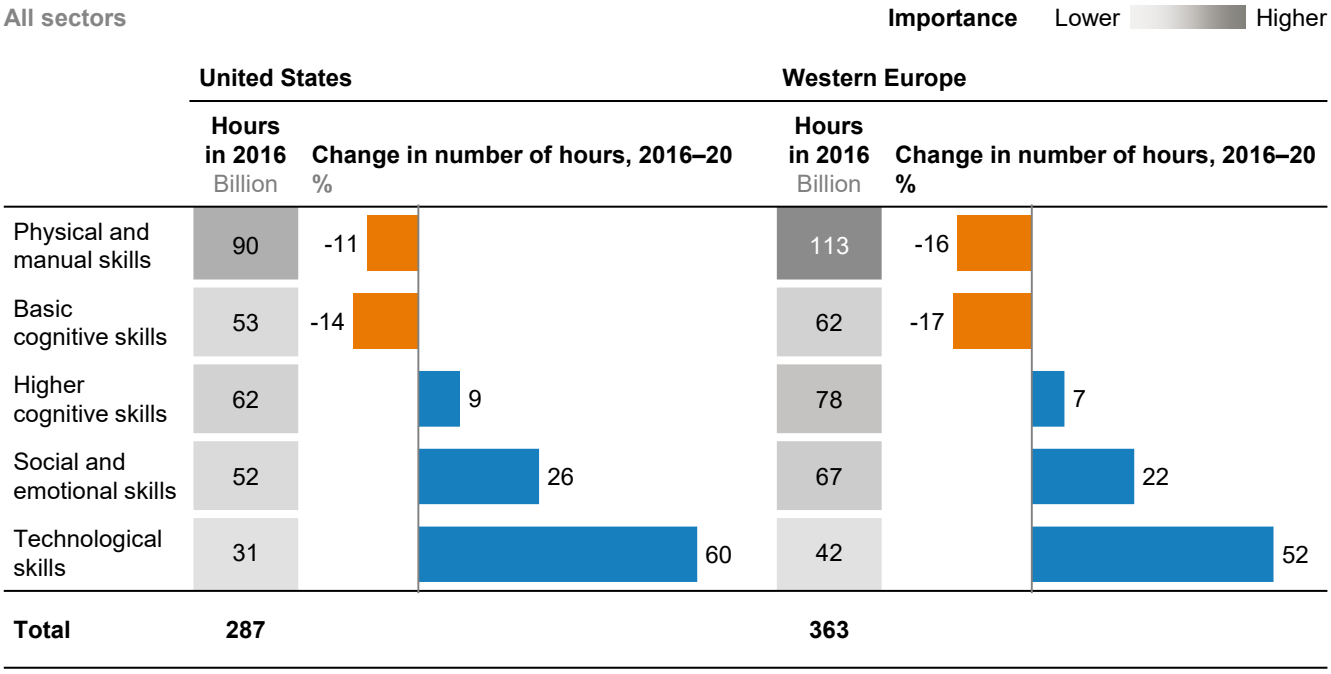
Third, workplaces and workflows will change as more people work alongside machines. This will be challenging both to individual workers, who will need to be retrained, and to companies, which must become more adaptable. Lifelong learning, long a topic of discussion, will need to become a large-scale reality.

Finally, automation will likely put pressure on average wages in advanced economies. Many middle-wage jobs in advanced economies are dominated by highly automatable activities in fields such as manufacturing and accounting, which are likely to decline. High-wage jobs, especially for high-skill medical and tech or other professionals, will grow significantly. However, many of the jobs expected to be created, such as teachers and nursing aides, typically have lower wage structures. The wage pressure is likely to be lower in emerging economies, where relatively low wages for many workers may delay automation adoption, as the business case is less compelling.

Exhibit 5

Automation and AI will significantly increase the need for technological as well as social and emotional skills.

All sectors



NOTE: Western Europe: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, and the United Kingdom. Figures may not sum to 100% because of rounding.

SOURCE: McKinsey Global Institute analysis

Increasingly unequal societies are polarizing, activism is on the rise, and the social contract is perceived to be broken

Despite growth in incomes and wealth across economies, variability and inequality in outcomes has also risen, and in some advanced economies, a portion of the population perceives the social contract as broken. This has helped fuel growing political and social tensions which have been manifested in various ways, including the rise of anti-establishment parties promising to break the mold in some countries, Britain's 2016 vote to leave the European Union, and recent protests by yellow vest-wearing "gilets jaunes" in France. Our research found that in 2005–14, real market incomes were flat or fell for between 65 and 70 percent of households in advanced economies. While this was partly the aftermath of the 2008 financial crisis, which recent economic growth has finally erased, other factors are structural and not going away. These factors include historic declines in the labor share of GDP as well as shifting demographics, which are reducing household size in many countries even as dependency ratios rise.

Stretching the period to 2017, in the labor market, we see increasing real income per capita but little change in average income inequality, and greater time spent unemployed, increased poverty, and higher GDP volatility. In the capital market, we see an increase in real wealth per adult and lower old-age poverty, but greater wealth inequality, an increase in the number of heavily indebted households, and lower net pension replacement rates.

Our research has highlighted some correlation between income stagnation and hostility to globalization in some developed economies. Citizen surveys we have conducted in France, the United Kingdom, and the United States show that a majority of people who feel that their income is not advancing and who do not expect the situation to improve for the next generation hold negative views about free trade and immigration. Rising income inequality is also a subject of growing public debate in Asia and other emerging regions. While the share of people living in extreme poverty has dropped sharply since 1990, from 35 percent of the global population to below 11 percent, the gap between rich and poor has also widened sharply. In some Asian countries, the richest 1 percent of households account for close to 10 percent of total consumption and the Gini coefficient, a measure of inequality, has increased.

Environmental stress is increasing, with implications for the most vulnerable countries, industries, and people

Increasing levels of economic activity at a global scale are having an impact on the environment, both positive and negative. Rising levels of carbon emissions from energy production and use are linked to increasing risks to endangered environments and higher levels of environmental stress. At the same time, breakthroughs in AI, batteries, and renewables are enabling a more carbon-efficient growth path.

Migration flows linked to the environment are on the rise. Forced migration has risen sharply over the past five years. The number of refugees and asylum seekers rose by 2.5 million between 2005 and 2010, then jumped by 8.1 million between 2010 and 2015. In the future, climate change and other environmental stresses may drive people from their homes. Low-lying coastal areas face an increased risk of catastrophic flooding. This is already unfolding as a slow-motion crisis in places such as the Solomon Islands. Scientists warn that regions such as Southeast Asia, which has multiple coastal megacities, are vulnerable. Another scientific study warns that rising temperatures could force populations out of the Persian Gulf by the end of this century.

Higher requirements for sustainability in industry are forcing firms to rethink how they design and deliver products, services, and projects to increase focus on waste reduction and abatement of carbon emissions. Global growth in green and sustainable building construction was forecast to average 22.8 percent per year between 2012 and 2017. By 2030, the share of electrified vehicles could reach as much as 50 percent of new-vehicle sales in some places, with adoption rates highest in developed dense cities with strict emission regulations and consumer incentives. With battery costs potentially decreasing to $150 to $200 per kilowatt-hour over the next decade, electrified vehicles will achieve cost competitiveness with conventional vehicles, creating the most significant catalyst for market penetration.

MOVING TOWARD A MORE INCLUSIVE SOCIETY

Taking advantage of the opportunities that these trends offer—and avoiding or taming the challenges—will require big adjustments. In this concluding section, we sketch out what a more sustainable society might look like. Rekindling inclusive growth so that larger swaths of the population will be able to benefit from future economic growth and global flows will be an imperative. These ideas do not amount to a comprehensive action plan and are not meant to be exhaustive. Rather, they are thought starters for further discussion.

- **Adopt a pro-growth mindset and business–public sector agenda** that leads to rapid and sustained GDP per capita growth. All economies—both advanced and developing—can learn from the pro-growth agenda put in place by outperforming emerging economies, across both the public and private sectors. These include steps to boost capital accumulation through industrial policies and

savings, deeper connections to the global economy, creating the impetus for competition, and building in governments themselves greater competence, agility, and openness to regulatory experimentation. Productivity will also need to be translated into income and demand. For example, slow or uneven infrastructure investment has dogged many countries and regions: the world invests nearly 14 percent of global GDP in infrastructure and real estate, but that is not enough to address key issues of ailing infrastructure assets, rising populations, and the demands of economic development.

- **Capture the net positive economic impact of AI and automation.** AI and automation could boost productivity in the global economy at a time when productivity growth has declined sharply in advanced economies, following the 2008 financial crisis and the waning of previous waves of productivity growth. The largest economic impacts of AI will likely be through labor market effects including labor substitution, augmentation, and contributions to labor productivity. AI will also create positive externalities, facilitating more efficient cross-border commerce and enabling expanded use of valuable cross-border data flows. It will be important to build innovation capabilities across sectors like manufacturing, construction, and finance. Inclusive application of technology can raise GDP and bring real benefits in traditional areas such as agriculture, healthcare, and transportation. Setting up a system for digital identities alone could be a boon for growth, by enabling greater access to key services and by formalizing much of the informal economy.
- **Address the labor market implications of technology adoption**, including through large-scale retraining and transitioning of workers. Workers will need to acquire new skills and be more adaptable as they work ever more closely with evolving machines. Some companies including Walmart, SAP, AT&T, and emerging market companies including Tata, Infosys, and Tech Mahindra are adopting broad "reskilling" initiatives, but they remain exceptions. A much larger societal push is needed, not only to revamp education to make it relevant for the workplace of tomorrow, but also to retrain midcareer workers and provide them with new skills. Evolving education systems and learning for a changed workplace are starting points. Policy makers working with education providers and employers themselves could do more to improve basic STEM skills through school systems and improved on-the-job training. A new emphasis is needed on creativity, critical and systems thinking, and adaptive learning. Investing in human capital and reversing the trend of low and, in some countries, declining public investment in worker training are critical.
- **Address societal concerns of AI and automation.** Along with the widening economic gaps that might emerge as an unintended consequence of AI deployment, business leaders and governments will need to address other areas of concern, including misuse of AI. Multiple research efforts are currently under way to identify best practices and address such issues in academic, nonprofit, and private-sector research. Data privacy and use of personal information are critical issues to address if AI is to realize its potential. Europe has led the way in this area with the General Data Protection Regulation, which introduced more stringent consent requirements for data collection, gives users the right to be forgotten and the right to object, and strengthens supervision of organizations that gather, control, and process data.
- **Pave the way for a rise in independent work.** Our research finds that 20 to 30 percent of the working-age population in the United States and the European Union is engaged in independent work, with 70 percent of those doing so out of preference. In Asia, too, surveys suggest that talent managers make extensive use of independent or "gig" workers. While only about 15 percent of independent work is conducted on digital platforms now, that proportion is growing rapidly. Increasingly, people are using digital platforms to learn, find work, showcase their talent, and build personal networks. Some 900 million people have international connections on social media, and 360 million take part in cross-border e-commerce. Policy makers and business leaders can do more to facilitate new work opportunities and to accept and accelerate changing orthodoxies of work.
- **Gender equality represents a boost to growth well into the next decade for most economies.** Our research on gender equality has found that a "full potential" scenario, in which women participate in the economy identically to men, would add as much as $28 trillion, or 26 percent, to annual global GDP in 2025 compared with a business-as-usual scenario. This impact is roughly equivalent to the size of the combined US and Chinese economies today. An alternative "best in region" scenario, in which all countries match the rate of improvement of the best-performing country in their region, would add as much as $12 trillion in annual GDP in 2025, equivalent in size to the current GDP of Japan, Germany, and the United Kingdom combined, or twice the likely growth in global GDP contributed by female workers between

Exhibit 6

All regions have a substantial incremental GDP opportunity from bridging the gender gap.

Global GDP opportunity, 2025
Incremental 2025 GDP to 2025 business-as-usual scenario

	Full-potential scenario		Best-in-region scenario	
	%	% trillion, 2014	%	$ trillion, 2014
India	60	2.9	16	0.7
South Asia (excluding India)	48	0.4	11	0.1
Middle East and North Africa	47	2.7	11	0.6
Latin America	34	2.6	14	1.1
East and Southeast Asia (excluding China)	30	3.3	8	0.9
Sub-Saharan Africa	27	0.7	12	0.3
World	26	**28.4**	11	**11.8**
Western Europe	23	5.1	9	2.1
Eastern Europe and Central Asia	23	1.1	9	0.4
China	20	4.2	12	2.5
North America and Oceania	19	5.3	11	3.1

NOTE: Figures may not sum to 100% because of rounding.

SOURCE: ILO; WIOD; Oxford Economics; IHS; national statistical agencies; McKinsey Global Growth Model; McKinsey Global Institute analysis

2014 and 2025 in a business-as-usual scenario (Exhibit 6). MGI has established a strong link between gender equality in work and in society—the former is not achievable without the latter. Despite progress, significant challenges remain. They include notably low labor participation in quality jobs, weak senior representation in the pipeline, high financial and digital exclusion, entrenched social attitudes about women's roles, and pervasive problems of violence against women and girls. Women for now are also acutely underrepresented in the technology sector.

- **Integrate migrants effectively to realize a positive impact on global productivity and reduce economic and social gaps.** We estimate that workers moving to higher-productivity settings contributed roughly $6.7 trillion, or 9.4 percent, to global GDP in 2015—some $3 trillion more than they would have produced in their origin countries. North America captured up to $2.5 trillion of this output, while up to $2.3 trillion went to Western Europe. India, Mexico, Russia, China and Bangladesh are the top five countries of origin of migrants. Narrowing the wage gap between immigrant and native workers from 20–30 percent to 5–10 percent through better economic, social, and civic integration would translate into an additional $800 billion to $1 trillion in global annual output. Asylum seekers account for less than 10 percent of migrants but tend to attract the most attention. Experience in Europe shows the potential of faster asylum procedures, including through bringing all relevant authorities under one roof and deploying data management and effective IT systems.

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Each of the disruptive forces we have highlighted in this note would be challenging on its own; taken together, they can seem daunting. Yet the opportunities for the economy, business, and society that these global forces generate are equally compelling and, as we have sought to show, are already creating new prosperity for those quick to embrace them. We cannot ignore the potential challenges, chief among them the growing social inequalities that could arise from the transformational skews we have outlined. As societies, we will face challenges related to the future of work as well as inclusive growth; the two are closely linked. Embracing the trends while mitigating their negative impact on those who cannot keep up and on our environment is the new imperative of our era.

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